ATTACHMENT 2.2

BLACK RANGE
MINERALS

Detailed Description of the Pre and Post AMT Materials

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Detailed Description of the Pre and Post AMT materials

This attachment is provided to respond to the Colorado Department of Public Health and Environment's (CDPHE) letter to Black Range Minerals of 13 August 2016 in which the CDPHE requested that Black Range Minerals provide:

2. Detailed description of the following items:
2.2 The pre- and post-AMT materials:

- *How will the pre-AMT materials be obtained? Will there be any processing/mining operations conducted prior to AMT operation? If so, what will be these processing/mining operations?*

Pre AMT materials required at the SMC are run of mine (ROM) and water. The ROM material will be obtained via conventional underground mining methods which would otherwise take place at a non AMT underground mining operation. These methods include but are not limited to: 1) mine infrastructure development, 2) mine dewatering, 3) surface and underground resource/reserve delineation drilling, 4) blasting, 5) material sorting, 6) mucking and transport, and 7) stockpiling.

Water can be obtained through securing appropriate water rights and permits to pump water from within the deeper flooded mine workings of the SMC or via purchasing and hauling from an offsite location which has already secured a water supply. Additional information regarding water and the AMT system is included in Attachment 2.4 of this transmittal package.

With AMT incorporated at the SMC, conventionally mined ROM is delivered via underground mine buggies or haul trucks to a location within the mine where the AMT system and its ancillary components are staged. At this point the ROM is dumped onto a grizzly separator from the truck and passed through it via gravity. Once through the grizzly, the ROM feeds via gravity into a cone crusher where it becomes crushed to the appropriate size and then directed via a combination of conveyors and adjustable feeders to the AMT mix tank module. For additional discussion on the AMT system's ancillary component referred to as crushing, please see attachment 2.3 of the transmittal package.

- *What is the range of the anticipated uranium contents in the pre- and post-AMT materials? How is this value compared to those ores processed in traditional mining operations?*

The SMC has an existing average resource grade of 2,500 ppm uranium or 0.25 % U; this resource is the pre AMT material or ROM. Test work to date has consistently demonstrated that AMT is capable of a material disassociation which allows for physical separation that recovers ~85-95% of the ROM's uranium content into ~10-25% of the ROM's initial mass. The limited SMC test work to date indicates that ~90% of the pre AMT ROM's uranium can be recovered into 20 to 25% of the pre AMT ROM's mass.

Based on the limited test work and existing resource grades at the SMC, post AMT ore grades will average from 8,500 ppm U to 11,875 ppm uranium or approximately 1 % U. Based on the

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same test work, post AMT waste grades at the SMC can average from 155 to 335 ppm U, or approximately 0.025 % U.

The present uranium market subjects domestic uranium mining operations to only be economically viable if they have either low cost production, a high grade mineable resource/reserve, or some combination of both. Conventional domestic uranium mining is taking place in Arizona where uranium ore from high grade breccia pipe deposits is being mined underground and then transported to a Utah based uranium mill. Mined ore grades at these breccia pipe uranium deposits can average greater than 10,000 ppm U, or 1 %. See Appendix 1.3 of this transmittal package for further discussion regarding ores processed in traditional mining operations.

Mine waste rock piles exist at the SMC, particularly the Sunday Mine's Low Grade Ore Dump pile, and on average contain uranium grades in excess of 400 ppm uranium, or 0.04 % U.

- *What is the range of the anticipated particle sizes of the fine-grained post-AMT minerals? How is this value compared to the processed ores from traditional mining operations?*

In 2013, a particle size analyses was undertaken on material from the October Ore Pile Reclamation Mine after being subject to the AMT pilot unit and subsequent separation. The range of particle sizes found in this material was 0.2 to 37 microns. Both the median and average particle sizes within that range were approximately 10 microns.

In the limited AMT test work to date, a 400 mesh screen size (37 micron openings) has been utilized as the general post AMT separation size cutoff where smaller material is considered ore and larger material is considered waste.

The sample material submitted for particle size analyses was obtained using a 400 mesh sized screen on a slurry after it was subject to a number of impact circulations within the AMT pilot unit. This particle size range and average is expected to be similar to the range and average size of post AMT ore at the SMC which will be shipped to a uranium mill for processing. Please see Attachment 2.3 of this submittal package for further discussion on the ancillary system component referred to as separation.

At a traditional non-AMT mining operation the majority of the ore mass shipped to a uranium mill would be comprised of cobble to boulder-sized blocks of ore. This cobble and boulder-sized material is comparable to an AMT mining operation's ROM as it is dumped onto the crusher grizzly. A minority of a traditional non-AMT mining operation's shipped ore mass would be comprised of dust made up of a particle size range similar to the post AMT sub 37 micron sized material.

- *How much moisture contents are expected to be in the fine-grained post-AMT minerals after dewatering but prior to shipping?*

A slurry stream exiting the AMT system is subject to two ancillary system components prior to product packaging and shipping. These post AMT components are separation and dewatering. After separation a continuous slurry stream comprised of 5 % solids and 95 % water is pumped to a set of filter presses where a post AMT ore product containing approximately 30 % moisture content by mass is expected to be generated for shipping. See Attachment 2.3 of this transmittal package for further discussion on separation and dewatering or Attachment 2.4 for further discussion on water.